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PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Docket Number: A01062

MMB/yv

In re application of:

Gene Kelly Norris

Serial No: 09/981,339

:

Group Art Unit: 1714

Confirmation No.: 5496

:

Filed: 10/17/2001

:

Examiner: Peter A. Szekely

For: **A HALOGEN-CONTAINING POLYMER COMPOSITION STABILIZED
BY A LATENT MERCAPTAN AND A MIXTURE OF A ZINC
CARBOXYLATE AND ZINC CHLORIDE**

MAIL STOP: APPEAL BRIEF - PATENTS

Commissioner for Patents

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GROUP ART UNIT: 1714
APPEAL NO. _____

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF APPEALS AND INTERFERENCES**

REPLY BRIEF

In re the Application of NORRIS

Filed: October 17, 2001

Serial No. 09/981,339

For: A HALOGEN-CONTAINING POLYMER COMPOSITION STABILIZED BY A
LATENT MERCAPTAN AND A MIXTURE OF A ZINC CARBOXYLATE AND
ZINC CHLORIDE

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Examiner

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of : G. NORRIS

Application No. : 09/981,339

Group No. : 1714

Filed : October 17, 2001

Examiner : Peter A. Szekely

For: A HALOGEN-CONTAINING POLYMER COMPOSITION STABILIZED BY A
LATENT MERCAPTAN AND A MIXTURE OF A ZINC CARBOXYLATE AND
ZINC CHLORIDE

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REPLY BRIEF

This is a reply to the Examiner's Answer mailed October 1, 2004 in connection with the above-identified patent application.

Status Of Claims

While the Examiner has withdrawn certain rejections, all of pending Claims 1-6 and 9-35 remain subject to one or more continuing rejections. Therefore, Claims 1-6 and 9-35 remain rejected and on appeal.

Continued Grounds of Rejection and Applicants' Reply to Each

In the Examiner's Answer the following Grounds of Rejection have been maintained and are assumed to be the only remaining rejections of the present application on appeal:

A. 35 U.S.C. § 112, first paragraph

Applicant is pleased to note that the rejection of Claims 1-6 and 9-18, under 35 U.S.C. § 112, first paragraph, has been withdrawn.

However, Claim 35 remains rejected, under 35 U.S.C. § 112, first paragraph, based on the Examiner's continued assertion that there is no support in the as-filed specification for the feature "from greater than 12.5 wt% to 75 wt% of a mixture of zinc chloride and zinc carboxylate".

It is Applicant's belief that the Examiner continues to apply the wrong standard in the analysis of the recited feature in Claim 35 that the stabilizer composition comprises "from greater than 12.5 wt% to 75 wt% of a mixture of zinc chloride and zinc carboxylate". As discussed at length in Applicant's Appeal Brief, the question is not whether a particular number, value, subset, or species which is recited in an amended claim has been explicitly stated in the as-filed specification, but rather, would persons of ordinary skill in the art have understood from the disclosure provided in the as-filed specification that the applicant(s) were in possession of the particular number, value, subset, or species which is recited in an amended claim. See In re Alton, 76 F.3d 1168, 1175 (Fed. Cir. 1996); In re Voss, 557 F.2d 812, 817 (C.C.P.A. 1977); and In re Johnson, 558 F.2d 1008, 1018-19 (C.C.P.A. 1971). This standard has been consistently applied by the courts to find that disclosures which state features as ranges necessarily demonstrate that the applicant(s) are in possession of all values and sub-ranges falling wholly within the originally disclosed range. See, e.g., In re Wertheim, at 263, 264-265 (the parent specification disclosed a solids content ranging from 25% to 60%, and the claims of a child application that recited a narrower range of from 35% to 60% were found to be supported by the earlier parent specification even though not explicitly recited in the parent specification); In re

Blaser, 556 F.2d 534, 538 (CCPA 1977) (the narrower, but fully encompassed, range of “80°C to 200°C” recited in an amended claim in a child application was supported by the earlier disclosure of the broader range of “60°C to 200°C” in applicants’ parent application, even though the narrower range of 80°C to 200°C had not been explicitly disclosed in the earlier parent application); In re Johnson, at 1018-19 (subgenus later claimed in a child application was in possession of inventors because parent application disclosed genus).

The original claims and disclosure of the present application stated that the stabilizer compositions of the present invention comprise “from about 0.5 to about 75% . . . by weight” of the mixture of zinc chloride and zinc carboxylate (see US 2002/0091179, Claims 19 and 21 and paragraph [0023]). Thus, the range recited in independent Claim 35 (i.e., “from greater than 12.5 wt% to 75 wt%”) for the amount of said mixture in the stabilizer compound is clearly narrower than, and fully-encompassed by, the broader range originally disclosed in the present application. Thus, persons of ordinary skill in the art would certainly have understood that Applicant was in possession of the invention wherein the stabilizer compositions of the present invention comprise “from greater than 12.5 wt% to 75 wt%” of the mixture of zinc chloride and zinc carboxylate. The Examiner has failed to explain why he believes otherwise. Withdrawal if this rejection is respectfully requested.

B. 35 U.S.C. § 102(e)

Applicant is grateful for the withdrawal of all claim rejections based upon US 2002/0086920, as well as the withdrawal of the rejection of Claims 1-6, 9-18 and 35, under 35 U.S.C. §§ 102(a) and 102(e) based upon US6,528,566 and EP 0 890 608.

However, Claims 1-6 and 9-35 remain rejected, under 35 U.S.C. § 102(e), based on the Examiner’s continued assertion that US 6,232,380 anticipates the subject matter of these claims.

As discussed in Applicant’s Appeal Brief, the present invention relates to a polymer composition (Claim 1) comprising, among other things, a latent mercaptan of specified structure and from greater than 0.5 to about 2 phr of a mixture of zinc chloride and zinc carboxylate. In another embodiment, the present invention relates to a stabilizer composition (Claim 19) comprising a latent mercaptan of specified structure (most of which are “forward esters”, as

explained in Applicant's Appeal Brief) and a mixture of zinc chloride and zinc carboxylate. In still another embodiment, the present invention relates to a stabilizer composition (Claim 35) comprising a latent mercaptan of specified structure (which are "reverse esters", as explained in Applicant's Appeal Brief) and from greater than about 12.5 wt% to 75 wt% of a mixture of zinc chloride and zinc carboxylate.

US 6,232,380 fails to disclose all of the features of the present invention as recited in independent Claims 1, 19 and 35 and, in fact, teaches away from application of its disclosure to the opaque (e.g., white) polymer compositions of the present invention. In particular, US 6,232,380 discloses stabilizer compositions useful for stabilizing clear halogen-containing polymer compositions and which comprise a latent (blocked) mercaptan, having the structure set forth in detail in Conroy et al., and a synergistic amount of a free phenyl salicylate (see US 6,232,380, Col. 4, lines 19-26).

As explained in Applicant's Amendment filed November 2003, US 6,232,380 (Conroy et al.) teaches away from the present invention because it limits its own teaching to protecting clear halogen-containing polymer compositions against discoloration and degradation due to exposure to ultraviolet light, weathering and heat. This benefit is not realized when such stabilizers are added to opaquely pigmented or filled halogen-containing polymer compositions (see Conroy et al., Col. 4, lines 27-30), for which the present invention is suitable. Moreover, US 6,232,380, at Col. 20, lines 28-30, explicitly states that "[t]he halogen-containing polymer compositions that are stabilized by the stabilizer compositions of this invention are generally limited to clear formulations" (emphasis added).

According to the disclosure of US 6,232,380, the inclusion of presence of a free phenyl salicylate is critical, while the inclusion of any other stabilizers, such as zinc compounds, is entirely optional. Furthermore, the disclosure of US 6,232,380 groups together many various types of possible additional stabilizer compounds and provide lists of exemplary compounds, without any statement or indication concerning which, if any, of them may function better than others or how to select which ones might be useful, let alone that a mixture of zinc chloride and a zinc carboxylate would be preferable. Thus, the mere mention of the possible use of additional stabilizers, such as metal-based stabilizers, Lewis acids, organic-based stabilizers and

hydrotalcite-based stabilizers, in the disclosure of US 6,232,380 (e.g., Col. 17, line 66 to Col. 18, line 6), where each type of additional stabilizer includes a multitude of particular possible compounds, cannot be understood to be an anticipating disclosure of a specific combination of a specific pair of compounds that happen to be mentioned in the lists. Applicant submits that this is not a fair reading of US 6,232,380 and has only been arrived at by the Examiner in hindsight.

In the foregoing circumstances, it is respectfully submitted that the disclosure of Conroy et al. does not anticipate the present invention as recited in independent Claims 1, 19 or 35. Alternatively, it is also noted that since the present application and US 6,232,380 are, in fact, co-owned, submission and entry of a terminal disclaimer which disclaims any part of the term of any patent which issues from the present application beyond the term of US 6,232,380 should obviate this rejection and Applicant may be willing to submit such a disclaimer in the present application. In the foregoing circumstances, withdrawal of this rejection based on US 6,232,380 is respectfully requested.

C. 35 U.S.C. § 103(a)

The Examiner also continues to reject Claims 1-6 and 9-35, under 35 U.S.C. § 103(a), based on the Examiner's continued assertion that US 6,232,380 anticipates the subject matter of these claims. As discussed hereinabove and in arguments already on the record elsewhere in the present application, US 6,232,380 teaches away from application of its disclosure to the opaque polymers to which the present invention applies and US 6,232,380 cannot be fairly read to suggest the selection of two particular zinc compounds, in the specific amounts used in the present invention, from among the multitude of compounds listed as possible additional, but optional, stabilizers in US 6,232,380. Thus, the disclosure of US 6,232,380 fails to make the present invention (as recited in independent Claims 1, 19 and 35) obvious and withdrawal of this rejection is hereby requested.

Lastly, the Examiner has maintained his rejection of Claims 1-6, 9-18 and 35, under 35 U.S.C. § 103(a), based upon his assertion that the disclosures of EP 0 890 608 or US 6,528,566 render the present invention obvious.

US 6,528,566 and EP 0 890 608 both disclose polymer compositions comprising, among other things, from about 0.01% to less than 0.5% by weight, based on the halogen-containing polymer in the polymer composition, of a metal-based stabilizer or Lewis acid, or a combination thereof (see, for example, US 6,528,566, Col. 9, line 66 to Col. 10, line 36, and Claim 1; and EP 0 890 608, page 9, lines 29-47, and Claim 1). In both US 6,528,566 and EP 0 890 608, the metal-based stabilizers are disclosed as including various metal salt stabilizers, such as zinc carboxylate and other metal-containing compounds, and the Lewis acids are disclosed as including zinc chloride, as well as boron trifluoride, aluminum chloride, and methyltin trichloride. Furthermore, Duvall et al. '566 and Morton International '608 both disclose stabilizer compositions having an amount of blocked mercaptan present therein between about 87.5 wt% and about 98.5 wt%, with the balance (i.e., from 1.5 wt% to 12.5 wt%) comprising the metal-based stabilizer or Lewis acid (see Duvall et al. '566 at Column 4, lines 54-61; and Morton International '608 at page 3, lines 46-48).

In contrast, the polymer composition of the present invention, as recited in pending independent Claim 1, the mixture of zinc chloride and a zinc carboxylate is present in an amount of from greater than 0.5 to about 2 phr. Also in contrast to the disclosures of Duvall et al. '566 and Morton International '608, the stabilizer composition of the present invention, as recited in pending independent Claim 35, comprises from greater than 12.5 to 75 wt% of a mixture of zinc chloride and a zinc carboxylate. The surprising advantages of using higher amounts of the mixture of zinc chloride and a zinc carboxylate in the stabilizer than the amounts disclosed in the cited prior art have been demonstrated in Exhibits A and B of the Amendment filed November 2003 and are discussed therein. (Copies of Exhibits A and B are also attached hereto for convenient reference).

Neither US 6,528,566 or EP 0 890 608 contain any suggestion or indication, either explicit in the documents themselves, nor based upon the knowledge generally available to persons of ordinary skill in the art, that a different (i.e., greater) amount of zinc compounds, such as the amount recited in independent Claims 1 and 35 of the present application, would provide greater benefits than the lesser and non-overlapping amounts disclosed in US 6,528,566 or EP 0 890 608. In fact, as determined by Applicant and demonstrated by the results displayed in

Exhibits A and B of the Amendment filed November 2003, the early color of the inventive polymer composition is significantly improved by the inclusion of a greater amount of zinc compounds (i.e., from greater than 0.5 to about 2 phr of a mixture of zinc chloride and a zinc carboxylate) than is disclosed in either US 6,528,566 or EP 0 890 608 (i.e., both less than 0.5 %/phr). See also, pages 1-2 of the published version of the present specification, US 2002/0091179, paragraph [0011], for a discussion of the importance of early color and the synergy of the mixture of zinc chloride and a zinc carboxylate.

The data provided in Exhibit A (forward esters) and Exhibit B (reverse esters) previously submitted with the Amendment filed November 2003, has been already discussed at length in the Nov 2003 Amendment and in Applicant's Appeal Brief and, therefore, will not be further discussed here except to state that Applicant maintains that that data demonstrates that greater amounts of the combined zinc compounds (i.e., mixture of zinc chloride and zinc carboxylate) than are disclosed by either US 6,528,566 or EP 0 890 608, surprisingly achieve better, lighter early color of the polymer composition.

Thus, withdrawal of the rejections of Claims 1-6, 9-18 and 35, under 35 USC § 103(a), based on Duval et al. 6,528,566 and Morton International EP 0 890 608, is hereby respectfully requested.

CONCLUSION

Based on the foregoing, Appellant respectfully submits that pending Claims 1-6 and 9-35 do not contain new matter in violation of 35 U.S.C. § 112, first paragraph and are not anticipated or made obvious by any of the references cited by the Examiner. It is believed that pending Claims 1-6 and 9-35 are allowable over each of the cited references, for the reasons discussed hereinabove and elsewhere in the record. Appellant respectfully requests the Board to pass the pending claims to allowance.

Enclosed herewith, Appellant has filed a Certificate of Mailing to establish the timely filing of this Appeal Brief, i.e., within two months of the mailing date (October 1, 2004) of the Examiner's Answer.

The Commissioner is hereby authorized to charge any required fee(s), including petition, extension and filing fees, or to credit any overpayment(s), in connection with the submission of this Reply Brief to **Deposit Account 18-1850**.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "Marcella M. Bodner", with a stylized flourish at the end.

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